REMARKS

This is in response to the Office Action mailed January 29, 2003. Claims 1-25 were pending in the above-referenced application, but Claims 11-16 were withdrawn from consideration by the Examiner as being drawn to a non-elected species. In the Office Action, the Examiner objected to Claims 22-25 and objected to Figures 1, 2, and 3a-3d. The Examiner also objected to the drawings for failing to show every feature of the invention specified in the claims. The Examiner also rejected Claims 1-10 and 17-25 under 35 U.S.C. § 112 as containing subject matter that was not described in the specification.

Claim Objections

The Examiner objected to Claims 22-25. Applicant has amended Claims 22-25 to overcome the Examiner's objections. In particular, Claim 22 has been amended to change the term "said ; PSK signal" to "said PSK signal". In addition, Claim 22 has been further amended as shown above.

Claims 23-25 have been amended to address the Examiner's objections and to conform the preamble of these claims to the preamble of other dependent claims in the application. Entry of these amendments is requested.

Drawings

The Examiner objected to Figures 1, 2, and 3a-3d for failing to include a designation of prior art. Applicants have added a --Prior Art-- designation to these figures to overcome this objection.

The Examiner also objected to the drawings under 37 C.F.R. 1.83(a) for not showing every feature of the invention specified in the claims. In particular, the Examiner suggested that the "first and second storage device", "sample counter", and "phase offset generator" were not

shown in the Figures. Applicant has amended Figure 6 of the drawings to include a sample counter. With regard to the "first and second storage device" and the "phase offset generator", Applicant respectfully disagrees with the Examiner's characterization of the Figures not showing these features.

With regard to the claims' features of "first and second storage devices", Applicant submits that storage devices are shown throughout the Figures. For example, in Figure 6, the elements Symbol Delay Line 603, Look-up Table ROM 607, and SIN/COS Look-up Table 613 are all storage devices. Applicant is free to claim any of these devices as storage devices. In addition, in Figure 10, the elements Delay Line 1003 and Signal Trajectory Look-up Table 1007 are both storage devices that may be claimed.

One of ordinary skill in the art would understand that a delay line, a look-up table and ROM are all storage devices. This interpretation is supported by the specification at page 10, line 21, where it is taught that the sample points are contained in a look-up table. Likewise, the passage at page 15, line 3 teaches that in Figure 10, the symbols 1001 are coupled into the delay line 1003. As shown in Figure 10, the symbols a0, a1, a2, a3, a4, a5 are stored in the delay line 1003, which would be understood by one of ordinary skill in the art to indicate that the delay line 1003 is a storage device.

With regards to the term "sample counter", Applicant has amended Figure 6 to include this feature. Applicant thanks the Examiner for bringing to Applicant's attention the exclusion of this feature from the Figures. Support in the specification for this feature is found at page 11, lines 7-13 and within Claims 7 and 17. As described and claimed, the sample counter provides an input to the look-up table. Applicant has amended the specification to include the reference number "602".

With regard to the term "phase offset generator", this term is supported in the specification by the passage found at page 12, lines 11-13, namely, "A delay is placed in the

phase portion of the circuit because the phase portion can take longer to propagate through the circuitry than the respective amplitude information." Likewise, the passage at page 14, lines 15-21 describes the system and method for introducing a phase offset, namely, a block 905 that defines a positive or negative phase which is combined with the phase portion of the signal in the summing block 903. This phase offset signal is then provided to the modulator 907. Moreover, the passage at page 15, lines 6-7 describes an embodiment of a phase offset generator, namely, "The phase samples are summed in a summation block 1013 with a dynamic phase correction equation 1015. The factor K controls the amount of delay."

One of ordinary skill in the art would understand that these passages, and the corresponding elements of the Figures to which these passages refer, refer to a phase offset generator, which is thus shown in the Figures. It should be noted that the phase offset generator may comprise one or more elements in combination. As such, the lack of a block in the Figures labeled with text as a "phase offset generator" does not mean that that element is not shown. As usual, reference to the text must be made in order to understand the drawings.

Claim Rejections under 35 U.S.C. § 112 for Lack of Support in the Specification

In the Office Action, the Examiner rejected Claims 1-25 as containing subject matter which was not described in the specification in such as way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The portions of the claims which the Examiner believes are not supported are discussed below.

Prior to discussing the rejections of the Examiner, it may be helpful to establish the basis under which rejections based on 35 U.S.C. § 112 for lack of support in the specification should be analyzed. Since the claims are interpreted to be part of the specification, the language of the claims must be considered when determining whether the specification contains support for the

claims. Thus, there is a presumption that the claims, as originally filed, are supported by the specification. The following passages from the MPEP support this conclusion.

For example, page 168 of section 2100 of the MPEP reads:

> description requirement. While a question as to whether a specification provides an adequate written description may arise in the context of an original claim which is not described sufficiently (see, e.g., *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997)), there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed. *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). Consequently, rejection of an original claim for lack of written description should be rare. Most typically, the issue

In addition, pages 168-169 of section 2100 of the MPEP read:

> 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

Finally, page 169 of section 2100 reads:

> In rejecting a claim, the examiner must set forth express findings of fact which support the lack of written description conclusion (see MPEP § 2163 for examination guidelines pertaining to the written description requirement). These findings should:
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> (A) Identify the claim limitation at issue; and
> (B) Establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of "unpredictability in the

Working from this foundation, each of the Examiner's rejections are now discussed.

<u>A step of retrieving, from a storage device, intermediate values that lie, between the first and the second symbols, on the preferred signal path</u>

Support for this passage is found in the specification at page 10, lines 4-9, which reads as follows:

> It is therefore advantageous, for the performance of the system, to precisely define the path taken between symbols, in order to eliminate the generation of spurious frequency components. The path between symbols in this embodiment can be defined by specifying several sample points of signal values between symbols, thereby defining the path that the signal traverses as it makes the transition between the symbols.

In addition, the following passage at page 10, lines 13-22 supports the claim's language:

A preferred embodiment of the present disclosure, using the eight symbols discussed above, controls the path between symbols by specifying the sample points between symbols. This embodiment is illustrated in Fig. 6. These sample points represent intermediate values between symbols. These intermediate values are preferably generated in equal time increments. The number of samples needed between symbols can vary depending on design parameters and depending on how closely a signal must be controlled. For some applications, including the present illustrative embodiment, 4 samples between figures is considered adequate. The present embodiment is illustrated as part of DQPSK mechanism aslo shown in figure 6. In this embodiment all the sample points are contained in a look-up table.

In combination, these passages define that there is a look-up table that stores intermediate values that lie between symbols on a preferred signal path. It is understood by one of ordinary skill in the art that the look-up table is a storage device configured to store intermediate values. Support that the intermediate values define a 'preferred signal path' is provided by statements in the specification that it is advantageous to define the signal path taken between symbol values to eliminate generation of spurious frequency components.

The following passages in the specification support the claim language that the intermediate values are 'retrieved' from a storage device, such as a look-up table. At page 11, lines 4-5, the specification states that the signal trajectory look-up table produces a phase angle data 609 and an amplitude 611. The step of producing provides support for the step of retrieving.

At page 11, lines 10-11, the specification states that as the symbols are accepted, the successive values for I and Q are accessed from the ROM 607. The step of accessing symbols from the ROM provides support for the step of retrieving.

At page 15, lines 5-6, the specification states that "the output from the signal trajectory look-up table 1007 is phase samples data θ_i 1009 and amplitude samples r_i 1011."

Non volatile electronic memory

Applicant submits that support for the claims may be found in the specification, the claims, or the figures. As set forth above, the specification, figures, and claims provide support for "memory", while the claims, and in particular, Claim 8, provide support for the term "non volatile electronic". One of ordinary skill in the art, after reading the specification and claims, would understand that the Applicant was in possession of the invention as claimed, and that as part of the invention, the look-up table could comprise non volatile memory as is expressly set forth in Claim 8.

The intermediate values lie between the first and second symbols

Support for this claim element is discussed above. In particular, support for this passage is provided at page 11, lines 4-5; at page 11, lines 10-11; and at page 15, lines 5-6.

First and second storage devices

With regard to the claims' features of "first and second storage devices", Applicant submits that storage devices are shown throughout the Figures, and that support is contained in the specification. For example, in Figure 6, the elements Symbol Delay Line 603, Look-up Table ROM 607, and SIN/COS Look-up Table 613 are all storage devices. In addition, in Figure 10, the elements Delay Line 1003 and Signal Trajectory Look-up Table 1007 are both storage devices that may be claimed. Applicant is free to claim any of these devices as storage devices. One of ordinary skill in the art would understand that a delay line, a look-up table, and ROM are all storage devices.

This interpretation is supported by the specification at page 10, line 21, where it is taught that the sample points are contained in a look-up table. Likewise, the passage at page 15, line 3 teaches that in Figure 10, the symbols 1001 are coupled into the delay line 1003. As shown in Figure 10, the symbols a0, a1, a2, a3, a4, a5 are stored in the delay line 1003, which would be understood by one of ordinary skill in the art to indicate that the delay line 1003 is a storage device.

Sample counter

This term is supported in the specification by the passage found at page 11, lines 7-13, in Figure 6 as amended, and in Claims 7 and 17. The claims are part of the specification and hence, may be relied upon for support of the claims.

Phase offset generator

This term is supported in the specification by the passage found at page 12, lines 11-13, namely, "A delay is placed in the phase portion of the circuit because the phase portion can take longer to propagate through the circuitry than the respective amplitude information." Likewise, the passage at page 14, lines 15-21 describes a system and method for introducing a phase offset, namely, a block 905 that defines a positive or negative phase which is combined with the phase portion of the signal in the summing block 903. This phase offset signal is then provided to the modulator 907. Moreover, the passage at page 15, lines 6-7 describes an embodiment of a phase offset generator, namely, "The phase samples are summed in a summation block 1013 with a dynamic phase correction equation 1015. The factor K controls the amount of delay."

One of ordinary skill in the art would understand that these passages, and the corresponding elements in the Figures to which they refer, refer to a phase offset generator, which is thus shown in the Figures. It should be noted that the phase offset generator may

comprise one or more elements in combination. As such, lack of a block in the Figures labeled with text as a "phase offset generator" does not mean that that element is not shown. As usual, reference to the text must be made in order to understand the drawings.

Claim Rejections under 35 U.S.C. § 112 for Lack of Antecedent Basis

The Examiner rejected Claims 1-10 under 35 U.S.C. § 112 as lacking antecedent basis for the term "said first and said second symbol" as found in Claim 1. Applicant has amended Claim 1 to separately introduce a first symbol value and a second symbol value. Applicant thanks the Examiner for bringing this error to Applicant's attention.

This amendment corrects the defects in Claims 2-10 due to their dependence.

Other Miscellaneous Amendments

Applicant has made other amendments to the claims, as shown above, to correct typographical errors. Entry of these amendments is kindly requested.

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SUMMARY

Applicant asserts that Claims 1-10 and 17-25 are in a condition for allowance and respectfully requests a notice as to the same. If any matters remain outstanding, the Examiner is invited to contact the undersigned by telephone.

Respectfully submitted,

Dated: 4/29/03

By: _C. Miller_
Chad W. Miller
Registration No. 44,943
Weide & Miller, Ltd.
Bank West Building, Suite 530
7251 W. Lake Mead Blvd.
Las Vegas, NV 89128
(702)-382-4804 (Pacific time)